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## ABSTRACT

A discussion of vernacular instruction and instructional materials in Micronesia, a group of Western Pacific islands north of the equator, chronicles the development and recent history of vernacular and English literacy, reports on historical and contemporary efforts to develop a written vernacular, and documents the status of oral and literacy skill development in both English and the vernacular. Problems with the skills of educational personnel who prepare vernacular instructional materials are discussed. Extensive appended materials about the Micronesian region include descriptions of its geography, political and administrative characteristics, cultural and linguistic diversity, education systems, and critical problems and unique features of education. (MSE)

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HISTORY AND STATUS OF  
VERNACULAR SCHOOL MATERIALS AND INSTRUCTION  
IN THE MICRONESIAN REGION  
- WITH COMMENTS ON LITERACY AND EMERGING LOCAL EDUCATIONAL NEEDS -

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\* Prepared by Project BEAM staff.

**HISTORY AND STATUS OF  
VERNACULAR SCHOOL MATERIALS AND INSTRUCTION  
IN THE MICRONESIAN REGION  
- WITH COMMENTS ON LITERACY AND EMERGING LOCAL EDUCATIONAL NEEDS -**

In the Micronesian Region, where the indigenous languages are traditionally oral, the process of preparing written versions of these languages has created prospects for important advances in the development of literacy and for promoting the quality of education in the Region in general.

**A. Early Work to Develop the Written Vernacular Languages**

The first attempts to develop literacy in the Micronesian Region were made by Spanish Catholic priests in the Marianas as early as the 1600's. In the four years following his arrival in Guam in 1668, Father Diego Luis de Sanvitores founded three seminaries for the education of the Chamorro girls and boys. His religious efforts were funded by Queen Maria Anna (for whom the Mariana Islands are named), wife of Philip IV of Spain, because of her interest in the Christian education of native children. According to earlier scholars of the history of Guam and the Northern Marianas (Thompson, 1947; Joseph and Murray, 1951), the establishment of mission schools began in 1674, and by the end of the Spanish period, every village in Guam had a school where children were taught reading, writing, arithmetic, Spanish, music, handicrafts, and Catholic doctrine. Spanish records do not document the extension of this form of schooling to the Northern Marianas.

According to contemporary scholars of the Chamorro language (Underwood, 1986), the focus of these efforts was to develop a rudimentary spelling system and to translate the Bible and other church documents into the language of the indigenous Chamorros. Until recent times, written materials in Chamorro continued to emphasize biblical and catechism materials, with few if any strictly educational materials being developed. Changes in the early Chamorro orthography reflected changes that were taking place in the spelling of Castillian Spanish in Spain at the time. However, attempts to develop a Chamorro literature appear to have been absent, with the main function of written Chamorro being to accelerate the conversion of the Chamorro people to Catholicism.

In the 1800's, the American Protestant missionaries from Boston established mission schools in Kosrae and later in Pohnpei and the Marshall Islands (Anttila, 1965). They developed the earliest orthographies and basic reading materials in several of the Micronesian area languages (e.g., Marshallese, Pohnpeian, Kosraean, Trukese), and did so expressly for the purpose of educating both children and

adults. The purposes of their schools appears to have combined ministry training and attempts to initiate the development of literacy in the members of their churches.

After establishing their first mission school in Kosrae in 1852, they worked extensively in English as an instructional medium. In 1879, they moved the mission schools they had established in the Marshalls and the Gilberts to Kosrae. A girls school was added in Kosrae in 1886. After the installment of the initial mission school in Ebon, an atoll of the Marshall Islands, schools sprang up in other Marshall Islands as well.

The work was systematized, and a little printing office was set up. Native children were trained as typesetters, for the teachers were anxious to get the Bible into Marshallese hands as quickly as possible. To that end, the Bible was translated into Marshallese. A training school was established to teach theology to native Christians who were to assist in the field. This was the school which was moved to Kosrae in 1879. (Source: Anttila, 1965, based on Fensham, F., and Tuthill, B., 1907.)

A girl's boarding school was begun in Pohnpei in 1882, and ended six years later when the Spanish banished the Protestants from Pohnpei and installed Spanish as the mandatory language of instruction. In another development, a mission training school for young men and women of the Mortlock Islands and Truk was established in Truk in 1886. A girls' school was also established on Truk by a missionary woman about the same time. The language of instruction was probably a mixture since the key educators were native English speakers who were learning the languages of the students as second or additional languages. A printing press was put into operation in one of the Trukese mission schools in 1892.

The missionaries translated the Bible, reduced native languages to writing, put out grammars, readers, textbooks, and dictionaries. (Source: Anttila, 1965, based on Fensham and Tuthill, 1907.)

Although Spanish priests from the Philippines were in the Palaus in the late 17th century. Spain apparently made no educational attempts until the late 19th century. Yap too was almost untouched by European languages and education during this period.

During the brief German occupation of Micronesia from 1885 until the first World War, Germany made almost no investment in education. Education was left almost entirely

to the various missionary groups. During this time, school attendance for children 7-13 years of age was made mandatory. In the Palaus, the men's houses were replaced by schools for young men. Nearing the end of the German period, in 1905, the American Protestant Missionaries of Boston reported 3,517 students in their missionary schools. At the onset of WWII, Germany steamed out of Pacific harbors and were quickly replaced by Japan.

Yanaihara (1940) reports that in 1914 the Japanese closed the mission schools in Micronesia. Others report that some mission schools were allowed to continue if they did not disturb peace and order. Lessons in the Japanese language, arithmetic, and singing were given by the Japanese. The Japanese-sponsored native elementary schools were set up in numerous administrative centers. About 1921, there were 17 Japanese schools with 2,300 children about 8 - 12 years of age. Conflicting reports surround the issue of the language of instruction. While some (e.g. Yanaihara, 1940) insist that only Japanese was used, others (e.g. Anttila, 1965) report first-person accounts by Micronesian teaching assistants who claim to have translated the Japanese teacher's verbal instructions into the vernacular, in a concurrent bilingual instructional method. But there is no argument in the reports that the vernacular languages were never used in written form during the period of the Japanese educational system. Reports on the schools for 1924 (Japanese Government, 1925) show that half of the total school time was spent in learning Japanese ("pronunciation, easy conversation, reading and writing of the composition in Kata-kana characters"). For second year students, Hira-gana characters and Chinese characters were added. In 1926, nine mission schools continued to operate. Most taught in the vernacular, but some had converted to Japanese as the language of instruction. School attendance was quite high in some islands, such as Yap (98 percent), where the population is concentrated. But where students were widely scattered, as in Truk (about 50 percent), it was reported to be much lower (Price, 1944). Even Micronesians who completed the five year course (most had only three years) reportedly could not read a Japanese newspaper, book, or magazine. Thus, written language, even one in which instruction was provided, had been taken from the students' grasp during the Japanese period.

Once the hostilities of WWII began, information on education in Micronesia ceased to be reported. However, the American Board of Commissioners for Foreign Missions reported (1948) that with the exception of a handful of German missionaries, no foreign missionaries were permitted in the Region between 1941 and 1946.

The major investment in literacy and education in the Micronesian Region was made under U.S. sponsorship after World War II, and with particular emphasis after the mid-

1960's. For this undertaking, English has generally been put forward as the prestige language (Underwood, 1984), a position reinforced by the fact that English proficiency is an essential qualification for those aspiring to hold a government job - the main source of salaried employment in the Region. English is formally studied as the main academic subject in all schools within the Region. Although English is the predominant language of the schools in Guam, and is rapidly assuming this position in the Commonwealth of the Northern Marianas, the vernacular languages continue to be the mediums of instruction in public elementary schools everywhere else in the Region. In the few high schools within the Micronesian Region (beyond Guam and CNMI), English is officially designated as the language of instruction; however, in actual practice, the vernacular languages are used extensively in these settings as well. Except in Guam, English is a second and usually non-dominant language for the majority of school teachers. Except for Guam and the CNMI, English is present in the community only as a government and tourist language, or a lingua franca amongst Micronesians of diverse linguistic groups. Thus, students will develop in a linguistic community in which the indigenous language of their culture is the primary linguistic input, with English and other languages of the Region heard as rare or only occasional inputs.

Within this linguistic and educational context, the development of universal literacy and effective education will be very difficult to realize if the educational materials and the medium of instruction are designed to be based only in English. Understanding that children learn most quickly to read and write in a language which they already speak and comprehend aurally, and that teachers teach most effectively in a language in which they are proficient, educational leaders and policy planners for the Micronesian Region have, in the recent past, attempted to develop curriculum that combined English as a Second Language materials (for both oral and reading development), and locally produced vernacular language materials. Due to problems inherent in the specific English materials enjoying the most widespread use (the South Pacific Commission readers), as well as with the vernacular material development processes and resources, the development of literacy and educational quality is not progressing as rapidly as is needed, desired, or possible.\* This is not to ignore the several other very important dimensions in the complex multidimensional situation of educational development in Micronesia. However, most observers of education in this Region would rate problems with educational materials, and

\*For example, preliminary results of an evaluation of SPC materials show readability levels in the first grade for materials recommended for grades 5 and 8.



the process of developing appropriate materials, as a key obstacle to progress (e.g., Title VII evaluation reports on Kosrae and Belau, 1983-84; 1984-85).

**B. Contemporary Efforts to Develop the Written Vernacular Languages:**

During the early post-WWII American period of the 1950's and 1960's, when educational development was selected as a major strategy to represent the U.S. involvement in the Micronesian Region, educational decision makers were undecided about the most appropriate language use policy for the schools. Many of the imported teachers and "experts" opposed the use of the vernacular languages in the schools, arguing that vernacular materials would not be helpful to students as they entered all-English high schools and colleges. The importances of English was also pegged on the hope of developing a lingua franca that would permit peoples of the Region to communicate across cultures and political jurisdictions with one another. Robert Gibson, High Commissioner of the Trust Territory and a major educational influence of the times, vigorously advocated the use of the vernaculars for school materials and for the instructional mediums.

Strong contemporary efforts to develop the vernacular languages in written form emerged in the 1970's. A resolution of the Micronesian Congress in 1969 set the stage by calling for the use of the vernacular languages in all public schools of the Region. In response to this call, in 1971, the University of Hawaii initiated the PALI Project which designed and implemented a program to develop vernacular dictionaries and reference grammar books for each of nine Micronesian languages. All departments of education in the Region sent people to the University of Hawaii to participate. The project used a strategy of pairing an outside trained linguist with an indigenous language informant who was simultaneously receiving linguistic training. It is remarkable that most of the dictionaries were completed (Carolinian, Ulithian, Satawalese, and Mortlockese being the unfinished exceptions). They and the reference grammars that accompany many of them supplied the essential bedrock resources for the development of indigenous vernacular literatures, writing systems, educational materials, and for vernacular materials for all other major societal functions, such as business, government, and the media. Seemingly unnoticed is the corps of highly trained indigenous linguists who evolved from this process. Most of these individuals have continued to be active, and many now play prominent roles in education, government, and political functions of the Region.

Simultaneously, instructional elementary school staff had obtained the first Title VII bilingual education grants.



In 1968 the first such program was initiated on the island of Rota in CNMI. In 1970, the first bilingual education program was begun in Guam with U.S. federal support. Other jurisdictions in the Region soon followed these examples, creating important resources for vernacular material development. These basic bilingual education programs in Micronesia have always been viewed as having as their main function, the development of vernacular materials. Unfortunately, this perception has prevented the involvement of the instructional focus in designated project classrooms and schools that would be most desirable; a focus which is just now beginning to become evident. Nevertheless, the early bilingual education grants to LEAs may be legitimately credited with most advances that have been made to date on vernacular material development, dissemination, and classroom use. Although they have been coordinated with other federally and locally funded programs that assisted with these objectives, the bilingual education grants have supported curriculum writers, specialists, and preparation/printing costs for many of the materials now available to children in the Region. Curriculum writers for the grants have written vernacular materials which have been designed mostly for children in grades one through five.

The important role played by the University of Hawaii in the creation of the written vernacular languages was extended by three other federally funded projects. In the Spring of 1974, a program known as BETT (Bilingual Education Teacher Training) for Micronesian Region teachers was established. All LEAs took the opportunity to send classroom teachers and curriculum writers. A group of more than 20 participants attended regular University of Hawaii classes in ESL and linguistics. Especially designed courses in curriculum development and the writing of vernacular reading materials were offered to the participants. As a part of the training, the participants assembled a 60 page storybook written in some of the dialects of the nine official languages of Micronesia.

After the initial one year BETT training, most participants returned to their islands and joined the ongoing bilingual education programs. These programs continued to support curriculum writers and artists, and at this point absorbed the newly returned BETT participants as they developed the new vernacular materials. Educational interest and appreciation of these materials periodically expanded and constricted. The logistical and technical problems of producing and having the materials printed have been discouraging throughout the years. The creation of the PALM project, Pacific Area Language Materials, in the latter 1970's, supplied a resource foundation for

training, technical assistance, and actual printing and production of materials that had always been missing in the past. Many materials were produced during this period. In 1983, PALM issued a catalog which inventoried the materials it and the LEAs had produced (PALM, 1983). No thorough inventory has been undertaken since that time. In activities in progress at this moment, the TTPI SEA grant is attempting to inventory all vernacular materials within its jurisdictions (Tawerilmang, 1986). Table 1 offers informal estimates based on Title VII evaluation reports and estimates made by project personnel. These same materials today form the basis of most first language literacy and education throughout the Micronesian Region.

PALM functioned in coordination with a continuation of the BETT project, known in its newer form as BEPM, Bilingual Education Program for Micronesia. This too was a teacher training project in the main, again based at the University of Hawaii, but also with the participation of curriculum writers and specialists who received technical training and implementation time necessary to the work of PALM. The PALM project expired as OBEMLA phased out the material development centers in 1983-84. Many of the works in progress in the vernacular languages throughout the Region were unfinished when PALM was closed. Extended activities have been coordinated by the continuing efforts of key PALM staff members in the years since, through a patchwork of small local and federal budget allocations from a range of sources. However, on the whole, the materials development activities of the Region have significantly constricted since the ending of PALM. Many observers are of the opinion that current and future vernacular material development efforts must be more locally based, with local educators responsible for all aspects of the process. This would not preclude the accessing of training and technical assistance beyond local island boundaries when necessary, but it would relocate control and capacity in the hands of local educators and educational systems within the Micronesian Region per se. These same observers suggest that materials writing has become a skill that is fairly well developed and under local control, with the expectation of continuing local support; however, that the printing process and other aspects of technical quality and production are the elements of the process that continue to create the biggest obstacles. Examples are offered of as many as 40 or more materials in camera-ready condition having been turned in to a local government printer one or more years earlier, with no product available to classrooms even now. On-site observations of the curriculum and material development process show that illustrators want and need training and advice. They function without access to basic art supplies and materials. Material designers and developers are unaware of methods for making materials pedagogically sound and have not had opportunities to examine high quality materials in various

Table 1  
1982 - 83 Status of Vernacular Publications\*,  
with Comments on Changes\*\*

Language	Under Devel- opment	Pilot Version	Ready For Publi- cation	Published	Total Potential Materials	Comments
Carolinian	1	33	52	11	97	Range of student/teacher/lessons, 1-5.
Chamorro	13	35	38	29	115	Elementary language arts.
Kosraean	19	21	39	15	94	Student LA booklets, 1-4; some science/math/ss, 4-6.
Marshallese	15	17	4	0	36	Elementary language arts.
Belauan	10	10	0	21	41	Language Arts, 1-6; content areas, some for 4-6.
Pohnpeian	8	41	22	5	76	Mostly language arts, 1-6.
Trukese	9	47	9	9	74	Student/teacher language arts, 1-3
U- Ulithian	4	24	10	1	39	None in use. Mostly language arts, early elementary.
U- Woleaian	5	51	0	0	56	
U- Satawalese	0	0	0	0	0	
Yapese	2	16	6	16	40	LA, and other content areas, 1-6.
U- Mortlockese	0	0	0	0	0	
Q- Pingalapese	0	0	0	0	0	
Q- Mokilese	0	0	0	0	0	
Kapingamarangi	0	0	0	0	0	Materials for the Outer Islands of Pohnpei have been developed to pre-pilot and pilot stage in small quantities.
Q- Sapwuavik (Ngatese)	0	0	0	0	0	
Nukuoro	0	0	0	0	0	

\* A typical 4th to 6th grade booklet is approximately 400 - 700 words in length.

\*\* Source of the 1982 - 83 status report is: Instructional Materials Catalog, 1982/83, for Pacific Area Bilingual Education. Honolulu, Hawaii: PALM Project, University of Hawaii, 1983. Comments are based on on-site visits and discussions with Title VII project staff during the 1985-86 academic year.

content areas. Knowledge necessary to becoming well-informed consumers of vendor services such as typography, illustration, photography, and printing is illusive.

Although the federally supported materials development projects in Micronesia laid the foundations needed to create vernacular orthographies, dictionaries, and the beginnings of an educational material storehouse, the process was prematurely halted. Many efforts were unfinished at the end of PALM, and arrangements for completing the building of local capacity to carry on these activities in the absence of the University of Hawaii project were not in place. The failure to bring closure to this process of building local capacity for developing vernacular educational materials gives rise to a sense of urgency now as the role and resources of the United States become increasingly distanced from the Micronesian educational systems.

### C. Status of English Oral and Literacy Skill Development.

It would be appropriate at this point to document the status of English and vernacular language development (listening, speaking, reading, writing) in the various languages of the Micronesian Region. If, for example, English oral language development has been established, the goal of achieving age-appropriate levels of literacy in English could be attained by focusing efforts on the selection of higher quality English textbook materials and more training of instructional staff to use these materials effectively. The availability of many very high quality materials in the various subject areas in English would simplify such a task. However, if students have low oral English language proficiency, and particularly if it is also low in their teachers and communities as well, then the logic of developing more vernacular educational materials becomes more compelling. Unfortunately, for many of the same reasons that educational development and literacy is not advancing as fast as might be desired, neither is the organization of educational testing and documentation. Thus, in the presentation below, interpretation must be based on a widely mixed set of instruments, on samples not drawn randomly, on evaluation designs with a myriad of unconventional intervening factors, and on some scraps of evidence that can only supply a speculative base for hypotheses in need of testing.

English oral language proficiency has most often been assessed in the Micronesian Region (excluding Guam) via the listening test of the Micronesian Achievement Test Series (MAIS), or with locally developed tests which are similar in design (Figure 1). These tests all consist mostly of items that have children point to pictures of common objects or actions as the English term for these is pronounced by

the examiner in large group testing situations. The MATS is based on the SPC oral language and reading materials. Therefore, the content is familiar to most students through their daily experience with these materials -- the major if not the only written curriculum materials in their schools. The MATS is used to test students in grades 3 to 6. Results in the 1979 fieldtest of MATS showed students differed in their listening performance as a function of how remote their islands are; but in general, students' performance on listening is superior to that in reading or math (Table 2). In recent years and in many locations in the Region, students answer most such listening items correctly by the time they are tested in the fifth grade. Unfortunately, the lack of validity data on the MATS makes it difficult to know how difficult this or other sections are, either to native English speakers of various ages or to limited English proficient students at various stages of second language development. No frequency or difficulty analysis of the test content is provided with the test. However, the items seem to be low in difficulty.

Speaking has not traditionally been assessed anywhere in the Region. In a recent study (Spencer, Palomo, and Vela, 1986), results of the English version of the Language Assessment Scales with Chamorro students, K-12, from Guam were analyzed. In this Central Guam, nonrandomly drawn sample of summer school students, 56 percent received scores placing them in the LES category (Table 3). Most noticeable was their inability to produce connected spoken sentences in English, although their English listening skills appeared to be adequately developed. In a very recent replication of this study with elementary grade students in Guam's Chamorro bilingual education program, almost identical results were obtained. Preliminary findings from a LAS pre-test in CNMI in January, 1986, indicate that the majority of students there also obtained LES test results. In view of the fact that Guam is considered the most advanced school system in the Micronesian Region, followed by CNMI, and that both place strong -- or in Guam's case -- almost exclusive emphasis on English, the finding that over half of the local Chamorro students are LES conditions one's expectations for the English oral proficiency of students in the other jurisdictions of Micronesia where English is much less common in any domain of life. For example, in a series of case studies of students in Ulithi, an outer island of Yap State, conducted by the proposed project director and her Outer Island students during the summer of 1985, the Bilingual Syntax Measure was administered. Of the 14 students tested, only one achieved a score in the upper ranges of Limited English Speaking, and this was a child who had traveled to Hawaii, Guam, and the United States mainland extensively with her parents. Most other students scored in the non-English or lower part of the limited English speaking range, even though several had had more than six

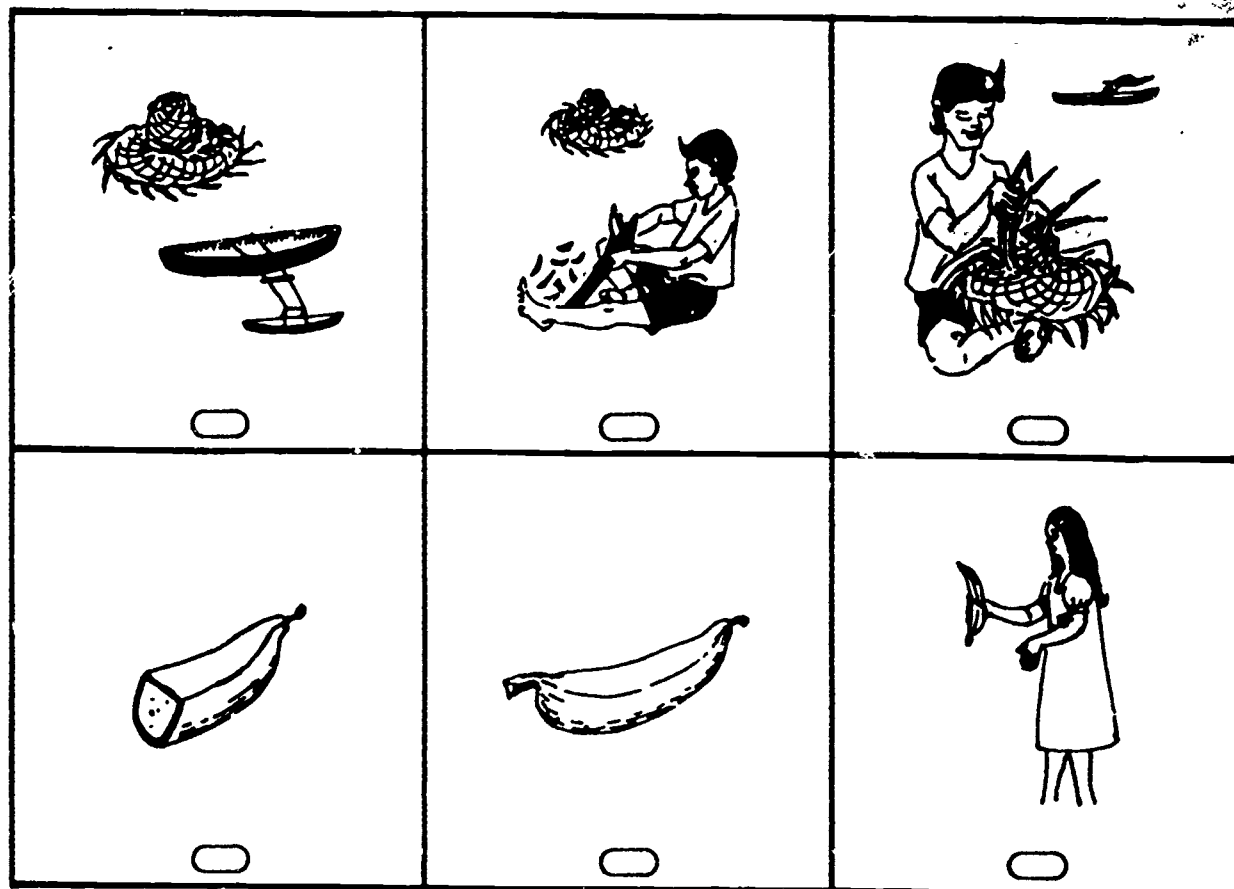


Figure 1. Listening items, Level A, Micronesian Achievement Test Series.

Table 2  
MATS English Listening Subscale Results for  
Trust Territory of the Pacific Islands Students, 1979\*

Level	No. of Items	N	M	SD
Level 1				
Grade 3	30	1,230	16.3	5.5
Grade 4	30	1,085	18.7	5.4
Level 2				
Grade 4	35	1,149	19.8	6.1
Grade 5	35	1,040	21.1	6.1
Level 3				
Grade 5	35	1,147	17.1	7.0
Grade 6	35	1,093	17.9	6.5

(Source: MATS Norms Tables, ETS, 1979)

\*Kosrae, Marshall Islands, Belau, Pohnpei, Truk, Yap



Table 3

English Oral Language Proficiency on the LAS for a Sample of  
Chamorro Students of Guam, Grades K-12, 1982.

Subscales	Number of Items	LAS I		LAS II	
		$\bar{X}$	SD	$\bar{X}$	SD
Minimum Pairs	30	24.40	5.60	21.20	4.30
Lexicon	20	18.45	2.09	19.97	.18
Phonemes	36	28.10	7.70	34.20	6.40
Sentence Comprehension	10	7.80	2.10	9.40	1.90
Production	5 (Rating Scale)	3.00	1.20	3.40	1.10
Total Score	100	71.00	17.20	80.20	18.00
Level	5	3.30 <sup>1</sup>	1.40	3.40	1.10
Valid Cases		(N = 76)		(N = 31)	
Total Records		92		36	

<sup>1</sup> Total records = 91  
Valid Cases = 75

years of English as a second language instruction. These results were particularly disturbing in view of the fact that all of their school materials are in English. Since the Ulithian dictionary has not been completed and since no school materials are available in the schools in Ulithian, literacy instruction there currently encounters almost insurmountable obstacles. A random sample of Kosrean first, third and fifth graders were tested with the LAS in summer, 1986. The mean English proficiency level was less than 1.5, non-English speaking, for all grade groups (Spencer, et al, 1986).

Guam is the only school district in the Micronesian Region that has systematically tested its students' reading achievement with a U.S. developed norm-referenced achievement test. In its most recent report of results (Tables 4 and 5) students obtained average percentile ratings on the SRA test of reading between the 20th and 25th percentiles except for grade 1 students who were at the 33rd and 44th percentiles, respectively, in 1984 and 1985 (Guam DOE, 1985). In the CNMI, the Metropolitan Achievement Test is occasionally given to provide clues to long range planning. A review of these confidential results over a seven year period shows an upward climb of reading achievement results, but with outcomes of recent years falling below U.S. Mainland norms.

Other school districts in the Region have opted not to use U.S. norm-referenced tests because of the expectation that their students could not cope adequately with the language and content of the test materials. The MATS was designed to serve as a substitute achievement test. Progress in achievement and education in general is evident from the fact that some school districts are now discontinuing their use of the MATS because of a "topping out" effect (e.g., in Pohnpei and CNMI). Unfortunately, the simplicity of the most difficult items on the MATS lead many educators to suspect that even the highest student reading and math levels are quite low (Figure 2 and 3). This tends to be supported by the fact that 70% of all students enrolling in the University of Guam, and 96% of Trust Territory students, must take basic ESL classes to develop English speaking, listening, reading, and writing skills sufficient to carry them through freshman introductory courses (Scraggs, et al, 1985). Nevertheless, the growth that would be needed to accomplish this is so extensive that many students (even though they represent a highly select group to begin with) do not succeed and must give up their hopes of pursuing a college education. Another glimpse at English literacy skills may be gained by considering the results of the Iowa Test of the Basic Skills as administered to the teachers of one of the states of the Federated State of Micronesia in 1985. On the average, these teachers obtained reading achievement scores ranging from grade equivalents of 5.0 to 6.4. Further evidence of problems with English literacy comes from a study of Kosrean sixth graders

Table 4

1984 Test Results by Grade Levels in Percentiles  
Up-dated to the New-(1985) Norms  
- Guam -

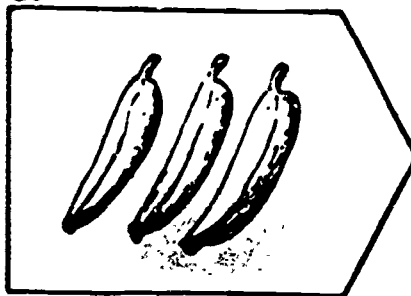
Grade Level	Composite Score	Reading	Math	Language Arts	Ref. Mat.	Soc. Stu.	Sci.	Applied Skills
1	17	33	31					
3	25	18	27	45				
5	28	23	30	32	47	39	38	
7	32	24	33	32	36	32	32	

Table 5

1985 Test Results by Grade Levels in Percentiles  
- Guam -

Grade Level	Composite Score	Reading	Math	Language Arts	Ref. Mat.	Soc. Stu.	Sci.	Applied Skills
1	29	44	39					
3	38	23	48	54				
5	31	24	36	33	48	39	37	
7	33	25	34	31	36	30	31	
9	29	25	36	28	33	33	31	
11	29	21	36	35	25	23	21	25
12	31	24	35	38	30	24	24	26

6.



coconuts



baskets



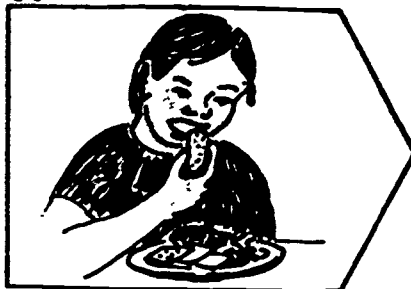
bananas



brown



7.



eat



sing



talk



play



## DANCING

Look at Mary.

Mary is dancing.

Ken \_\_\_\_\_ dancing, too.

Ken: "Mother. Father.

\_\_\_\_\_ at me.

I can \_\_\_\_\_.

I'm dancing."

Mother: "I can \_\_\_\_\_ you, Ken."

Mother is \_\_\_\_\_.

Father is laughing, too.

look

ETS  
USE

laughing

Ⓐ

at

Ⓑ

dance

see

Ⓒ

is

Ⓓ

Ⓔ

Ⓕ

Ⓖ

Ⓗ

Ⓘ

Ⓚ

GO ON TO THE NEXT PAGE

Figure 2. Reading items, Level 1, Micronesian Achievement Test Series

## AN ACCIDENT

There was once an accident in a home in  
Tom's village. The \_\_\_\_\_ was in John's home.  
\_\_\_\_\_ wife went out to \_\_\_\_\_  
in her garden. She \_\_\_\_\_ her little  
daughter in the \_\_\_\_\_.

accident	ETS USE
house	<input type="radio"/>
John's	<input type="radio"/>
left	<input type="radio"/> <input type="radio"/>
wife	<input type="radio"/>
work	<input type="radio"/>
	<input type="radio"/>
	<input type="radio"/>

The child was asleep \_\_\_\_\_ her  
mother left her, but \_\_\_\_\_ soon woke up  
and \_\_\_\_\_ for something to play  
\_\_\_\_\_. There were some matches in a  
\_\_\_\_\_ on the floor. The child picked the  
box up and started playing with the matches.

	ETS USE
box	<input type="radio"/>
looked	<input type="radio"/>
she	<input type="radio"/>
there	<input type="radio"/>
when	<input type="radio"/>
with	<input type="radio"/>
	<input type="radio"/>
	<input type="radio"/>

She lit some of the matches and dropped  
\_\_\_\_\_ on a mat on the \_\_\_\_\_.  
The child did not \_\_\_\_\_ herself, but when  
her mother \_\_\_\_\_ home, she found that the  
mat was \_\_\_\_\_ fire. She put the fire out  
quickly.

burn	ETS USE
came	<input type="radio"/> <input type="radio"/>
floor	<input type="radio"/>
herself	<input type="radio"/>
on	<input type="radio"/>
them	<input type="radio"/>
	<input type="radio"/>
	<input type="radio"/>

**GO ON TO THE NEXT PAGE**

(Spencer, et al, 1986). A group of students testing at the near English fluent level of the LAS Oral English test showed that even when they could decode 4th grade English passages, they could not comprehend the meaning and relied primarily on memorization of phrases for content recall.

#### D. Status of Vernacular Oral and Literacy Development.

In all parts of the Micronesian Region, except Guam and CNMI, the listening and speaking skills of students in their indigenous vernacular languages are currently so strong that the prospects of assessing these skills strikes most educators as a foolhardy extravagance. In Guam however, it has long been understood that Chamorro is declining among youth as a language of communication. The Spencer, Palomo, and Vela study (1986) demonstrated with the Sensuran Fino' Haya, a test of Chamorro listening and speaking which is parallel in construction to the LAS, that only rarely are children identified who can speak Chamorro in sentence form, although their listening comprehension skills for the language appeared to be fairly well developed (Table 6).

Recently, in CNMI, concern has emerged over the oral proficiency of Carolinian children in their traditional Carolinian language. To date, this concern is anecdotal and has not been systematically documented.

Most LEAs in the Region have developed criterion referenced tests at various grade levels which attempt to assess reading skills in the vernacular. Each of these tests include a small number of items, and usually focus on vocabulary-picture matching or perhaps a few cloze items with a word matching response system like that used in the MAIS English tests. None include adequate types nor numbers of reading comprehension items, leaving us with little information on the development of reading comprehension in the vernacular languages of the Micronesian Region. However, in Spencer, et al's study in Kosrae (1986), Kosrean teachers tested Kosrean reading comprehension and strategies of a random sample of third and fifth grade students. Although decoding was adequate for most students, very few rated well in comprehension and almost all relied heavily on memorization of phrases as their main recall/comprehension strategy.

#### E. Problems with the Skills of Educational Personnel who Prepare Vernacular School Materials -- Overview

At a time in history when the Trust Territory of the Pacific Islands is on the verge of making the shift away from U.S. sponsorship of its educational systems, and at a time when Guam and CNMI are both striding vigorously toward



Table 6

Chamorro Oral Language Proficiency on the Sensuran Fino<sup>1</sup> daya for a Sample  
of Chamorro Students of Guam, Grades K-12, 1982

Subscale	Number of Items	PRETEST <sup>1</sup> Mean Raw Score (SD)	POSTTEST <sup>2</sup> Mean Raw Score (SD)
Destingto Na Sunido - Pares	30	25.10 (6.58)	27.11 <sup>3</sup> (4.60)
Bukabulariu	15	10.37 (3.06)	11.60 (2.22)
Sinangan	10	5.79 (2.57)	7.22 (1.73)
Destingto Na Sunido - Sinangan	35	29.88 (5.62)	32.73 <sup>3</sup> (6.36)
Bukabulario 2	21	7.21 (6.57)	11.02 (5.76)
Estoria*	5	1.12 (0.41)	1.27 (0.56)
Total Score	100	37.01 (13.94)	46.32 (14.08)
Level	5	1.15 (0.53)	1.47 (0.90)

<sup>1</sup> Pretest Total Records = 70  
Pretest Valid Cases = 67

<sup>2</sup> Posttest Total Records = 70  
Posttest Valid Cases = 55

<sup>3</sup> Statistically significant, paired T-test, two tail, .05 probability level.

\* A production test which requires an integration of lexicon, syntax, and semantic facility to form cohesive and connected sentences.

U.S. educational standards, any assessment of education must deal seriously at some level with the fact that every school district in this Region is undergirded by multiple non-English primary languages. This is a multilingualistic environment, and this fact will unavoidably affect education. Effective education and high levels of achievement will develop in this Region only within a framework which makes maximum use of the natural resources deriving from the indigenous languages, cultures, and Pacific environments of these students.

For the LEAs in the Trust Territory, concerns are most intensely felt for rapidly developing any remaining elements of the types of capacity building which will most urgently be needed to carry on educational improvement in the years to come when U.S. resources are no longer available. Unfortunately, there are many critical needs which fall into this category. Key among these are: 1) the need for vernacular materials and the local capacity to develop these; 2) the need for teachers with four year degrees; 3) the need for school buildings and for high schools; and 4) the need for improved English and content area curriculum and materials. Teacher training and technical assistance to curriculum development can be provided to some degree by the multifunctional service center for the Micronesian Region, Project B.E.A.M. and by the IHEs of the Region. Local funds and communities are committed to physically maintaining their schools, even if the necessary new buildings are lacking funding. But even though local funds and intent are committed to vernacular material development, this one particular activity continues to have capacity-establishing gaps that must be met now if they are to be continued after the Trust Territory is dissolved. Moreover, materials development is a prohibited activity of multifunctional service centers. Therefore, the building of local skills to create vernacular school books and materials must be developed independent of any existing resources. In this Region, it is also an activity which needs coordination of technical resources and the provision of assistance most likely available from an IHE. Therefore, addressing capacity building must be undertaken by the University of Guam, the only 4 year IHE in the Region, in a project separate from any ongoing projects or grants.

Further justification for this distinct project and its relationship to other federal and local projects is provided later in the Coordination section.

Based on on-site visits throughout the Micronesian Region, reviews of existing materials, and multiple conferences with leaders of the developing orthographies and materials development activities, a preliminary series of specific needs has emerged:

1. As Table 1 shows, there is an inadequate supply of

vernacular materials in all languages of the Region, relative to the instructional needs in language arts, math, science, and social studies. This need pertains at all grade levels, although some grades are more adequately supplied at present than others;

2. Previous materials development work has proceeded before curriculum frameworks in language arts and the content areas were developed. Therefore, there is a pressing need in each LEA to review existing materials in an effort to plan how they fit into the new or developing curriculum frameworks, and to identify specific gaps in the various difficulty and topic ranges. There is a need to identify needs for teacher guides, lesson plans, student workbooks, student exercise packages, basal texts, supplementary readers, activity and extension materials such as manipulables and games;
3. There is a need to plan the development of vernacular materials with a knowledge of the underlying reading development processes, and with a knowledge of how conceptual development in the other content areas proceeds. This means that such materials should incorporate linguistic objectives, make use of what is known of how text structure impacts learning and instructional effectiveness, how materials may be designed to facilitate ease of teacher use; and the benefits of coordinating teacher and student materials;
4. There is a need to raise the quality and range of content in the vernacular materials. For example, curriculum writers need to have access to high quality information on Micronesian studies, Pacific literature, modern approaches to teaching math and to teaching a broader range of mathematical concepts than currently presented in Micronesian schools; or alternatively, to provide practical mathematical skills for agriculture, marine occupations, and business and commerce. Also promising is the prospect of incorporating Pacific geography and science into vernacular materials;
5. There is a need for professional training and technical assistance for those local members of vernacular materials development teams who are responsible for the illustrations, photographs, layout, book design, and other artistic/graphic aspects of the process. During the PALM Project much of the art and graphic work for the vernacular materials being developed was done by professional artists in Hawaii. Very few of the illustrators or graphic artists who are of the indigenous cultures of the Micronesian Region have ever received professional training or coaching. Most have trained themselves or have worked under the tutelage of relatives or local mentors. They typically work without

knowledge of technical advances that would broaden the range of their creative projects, or which could increase their productivity. They rarely have the opportunity to network and collaborate with other artists engaged in the same type of work. They work under great constraints as art supplies, tools, and equipment are either in very short supply or nonexistent. Nevertheless, there are many very talented illustrators and graphic artists in the Micronesian Region, and quite a number of them are attached to local Departments of Education. These individuals and their educational leaders have expressed needs for training, technical assistance from other professional artists and instructors of relevant artistic processes, access to supplies/tools/equipment, and opportunities to network and collaborate with other artists doing similar material development work. The provision of this form of professional development opportunity would enhance the whole scope of career prospects for these individuals while simultaneously filling a crucial gap in local capacity to develop vernacular educational materials;

6. The local materials development process needs to be analyzed and upgraded. Evaluators and educational consultants repeatedly observe that this process consumes a major share of resources but lacks essential cost-benefit planning and access to training/technical assistance/and linkage with outside resources necessary to effective and efficient functioning. This means analysis and assistance at every level of the process is needed:

- 1) using the curriculum as a basis for decisions regarding which materials should be developed; 2) designing specific materials from an educational, psychological, curriculum, and product point of view; 3) preparing draft copies of materials; 4) developing artwork and layout for materials; 5) piloting preliminary materials; 6) publishing materials; 7) disseminating and maintaining materials; 8) developing and maintaining collaborative associations with outside consultants and vendors essential to the materials development process; 9) establishing local self-sufficiency capacity in the materials development enterprise;

7. Curriculum and instruction specialists at the local level need to develop skills in conducting quality reviews of materials and need to be familiar with state of the art quality and variety in educational materials. Such skills will be essential to their self-sufficiency for developing vernacular materials, but will also serve them in their selection and planning for the use of English language materials;

8. Orthographic efforts in the vernacular languages of the Region need to be overviewed for their current status. Discussion and planning are especially needed on questions of dictionary revision or expansion, and the current condition of local public sentiment regarding the new orthographies and the use of these in vernacular school materials. Technological advances in personal computers and printers may significantly simplify the process of revising and expanding vernacular dictionaries, compared to the PALI dictionary and reference grammar procedures of ten years ago. The orthographic experts of the Region need to be exposed to information and examples of these technological advances. Also, in a number of instances, community controversies over the new orthographies inhibited the development and use of school materials. Over the past three to five years, educational and community leaders in some places have developed effective strategies for resolving these conflicts. Information on these and other promising planning approaches needs to be examined and disseminated;
9. Educational leaders from the full range of specialist areas need to understand the relationships between curriculum, classroom instruction methods, teacher/staff training, testing and evaluation, school improvement plans, language policy, parent/community involvement and the educational materials chosen or developed.

**APPENDIX:**

**DESCRIPTION OF EDUCATION AND THE  
EDUCATIONAL CONTEXT IN MICRONESIA**

**2**

- o GEOGRAPHICAL CHARACTERISTICS OF THE MICRONESIAN REGION
- o POLITICAL/ADMINISTRATIVE CHARACTERISTICS OF THE  
MICRONESIAN REGION
- o CULTURAL/LINGUISTIC DIVERSITY IN THE MICRONESIAN REGION
- o EDUCATION SYSTEMS IN THE REGION
- o UNIQUE FEATURES AND CRITICAL PROBLEMS OF MICRONESIAN  
REGION EDUCATION

*Prepared by the Project B.E.A.M. staff, Spring, 1986*



## Description of Education and the Educational Context in Micronesia

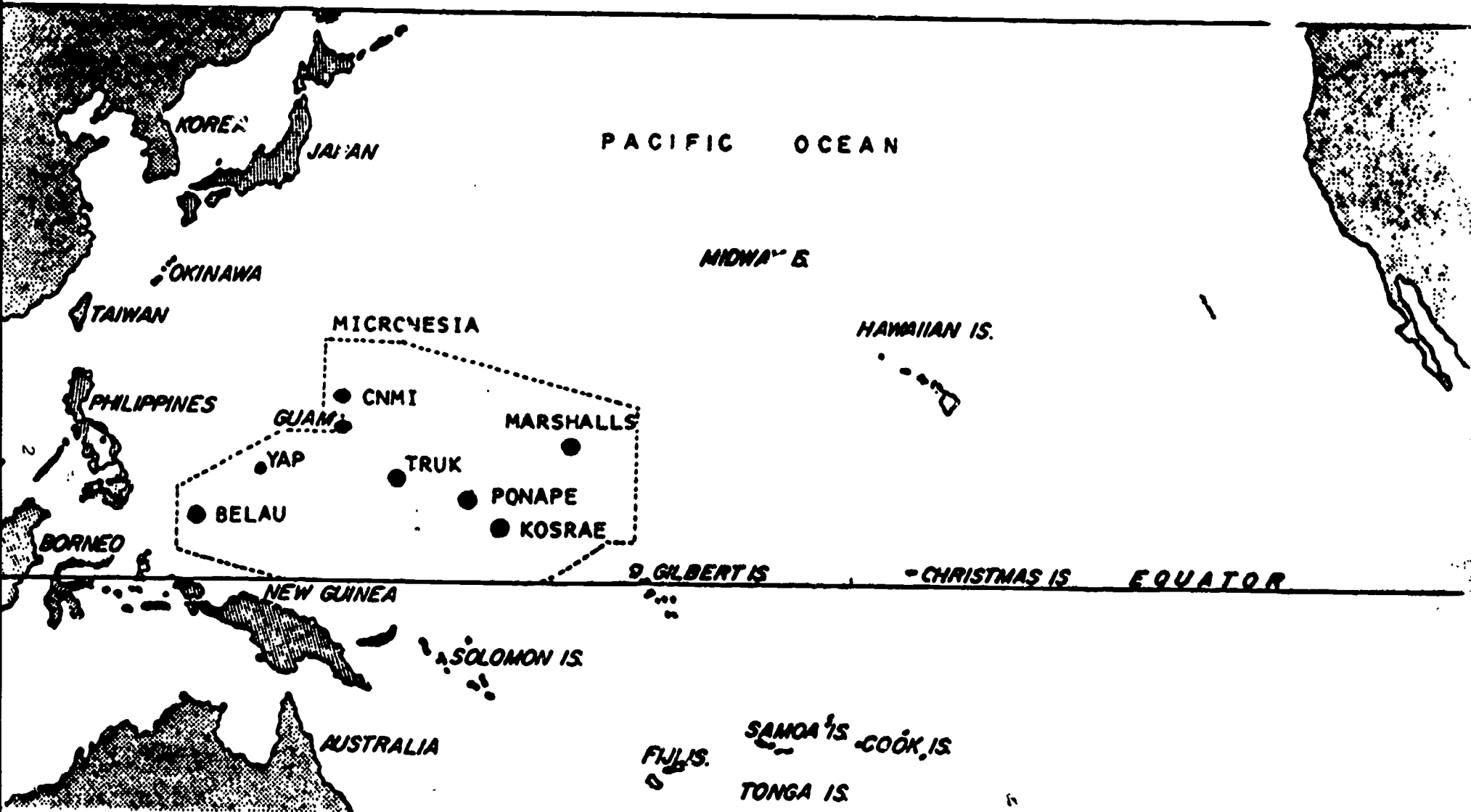
Several types of orienting information and data which document need for the proposed project will be presented in this section. The number of non-English languages spoken by students, the frequency of Limited English Proficient (LEP) Students, and other information on the educational status of the instructional personnel and schools will be presented. Because of the great distances between the Micronesian Region and the funding agency, and because of the unique nature of life and schooling in this Region, an overview of the Micronesian Region will be provided for the reader's reference. In addition, a detailed description of the material development problems to be addressed by the proposed grant will be undertaken.

### A. Geographical Characteristics of the Micronesian Region

Geographically, Micronesia is a group of islands lying just north of the equator in the Western Pacific, on the other side of the International Dateline from the U.S. The major islands or island groups are Guam, the Northern Marianas, Belau, Yap, Pohnpei, Kosrae and the Marshalls. From the center of the Region (Guam, Saipan), it is approximately 9,000 miles to Washington D.C. The portion of the Region nearest to the U.S. is the Marshall Islands which lies some 2,300 miles Southwest of Honolulu. The furthest point is Belau which is only 600 miles from the Philippines (see Map No. 1). The best indication of its distance from the U.S. Mainland is the fact that Guam, Truk, Yap, and Saipan are only one time zone removed from Japan and that the quickest way to fly from Guam to the Eastern U.S. is through Tokyo.

Within the Region, the distances are still enormous. The islands are stretched out over three million square miles of the Pacific Ocean which is equal in area to the continental U.S. Yet, in keeping with the term Micronesia (meaning "small islands"), there is only an approximate total land mass of 700 square miles among the more than 2,100 islands. In combination with the distances from the U.S. Mainland, the intra-regional distances present numerous logistical problems. These are complicated by the fact that regular air service is limited to three weekly flights to

Map No. 1



most of the major centers. These flights (provided by Continental Air Micronesia) are affected by frequent mechanical breakdowns and storms which can occur at any time of the year. Guam serves as the transportation hub for the Region and has daily air service to the Commonwealth of the Northern Marianas, Hawaii, and the U.S. Mainland. Service to one of the island entities (Kosrae) is available six days a week from Pohnpei on a nine-seater missionary airplane that is understandably full almost everyday.<sup>4</sup> The missionary airlines provide limited service to Pingalap, an outer island of Pohnpei, and to Ulithi, an outer island of Yap.<sup>5</sup> Access to the many other outer islands is possible only by fieldtrip ship which maintains four to six week visitation cycles, and some outer islands are accessible from central islands by motor boat. The limited transportation services complicated not only travel, but mail and shipment of supplies and equipment. Map No. 2 outlines the distances and the most recent air fares from Guam to various points in the Region and to Hawaii, and the U.S. Mainland. The fares are subject to change. Ironically, these logistical constraints serve in some ways to bind the Region together through needs to cooperate and share resources.

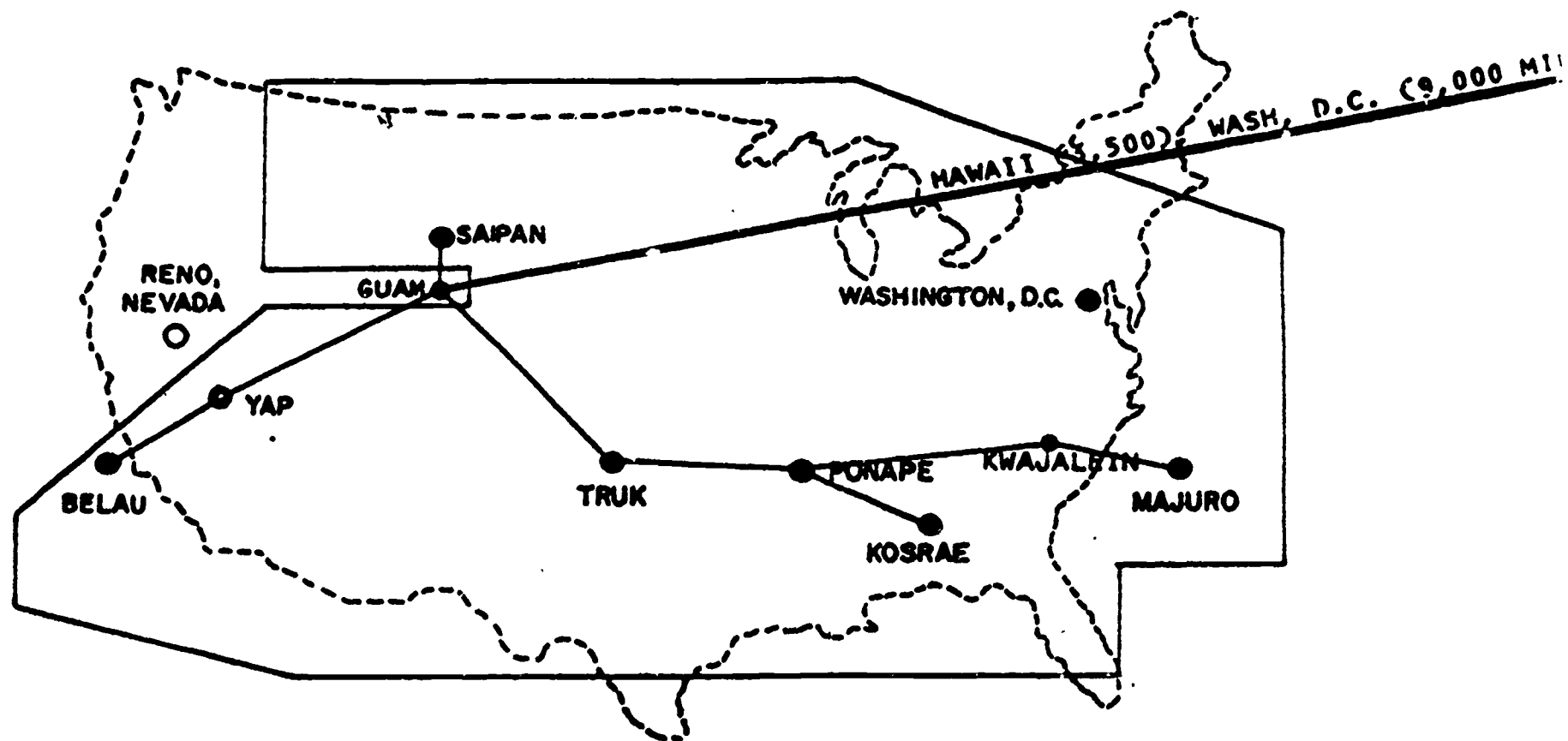
#### **B. Political/Administrative Characteristics of the Micronesian Region**

The Region has five distinct political entities, each with a separate political relationship with the United States. Each entity has had unique historical circumstances which have contributed to the formation of unique political states and the distinct socio-cultural conditions contained in each area. The five entities are Guam, the Commonwealth of the Northern Marianas (hereafter referred as the CNMI), the Republic of Belau, The Federated States of Micronesia (hereafter referred to as the FSM), and the Republic of the Marshall Islands (See Map No. 3).

Guam is the easiest to describe. It is a U.S. Territory that has been under U.S. sovereignty since 1898. It is governed by an Organic Act passed by the U.S. Congress and its people are U.S. citizens. The island is currently re-examining its political relationship with the U.S. government and it is possible that a "Commonwealth" status will eventually be the end result.

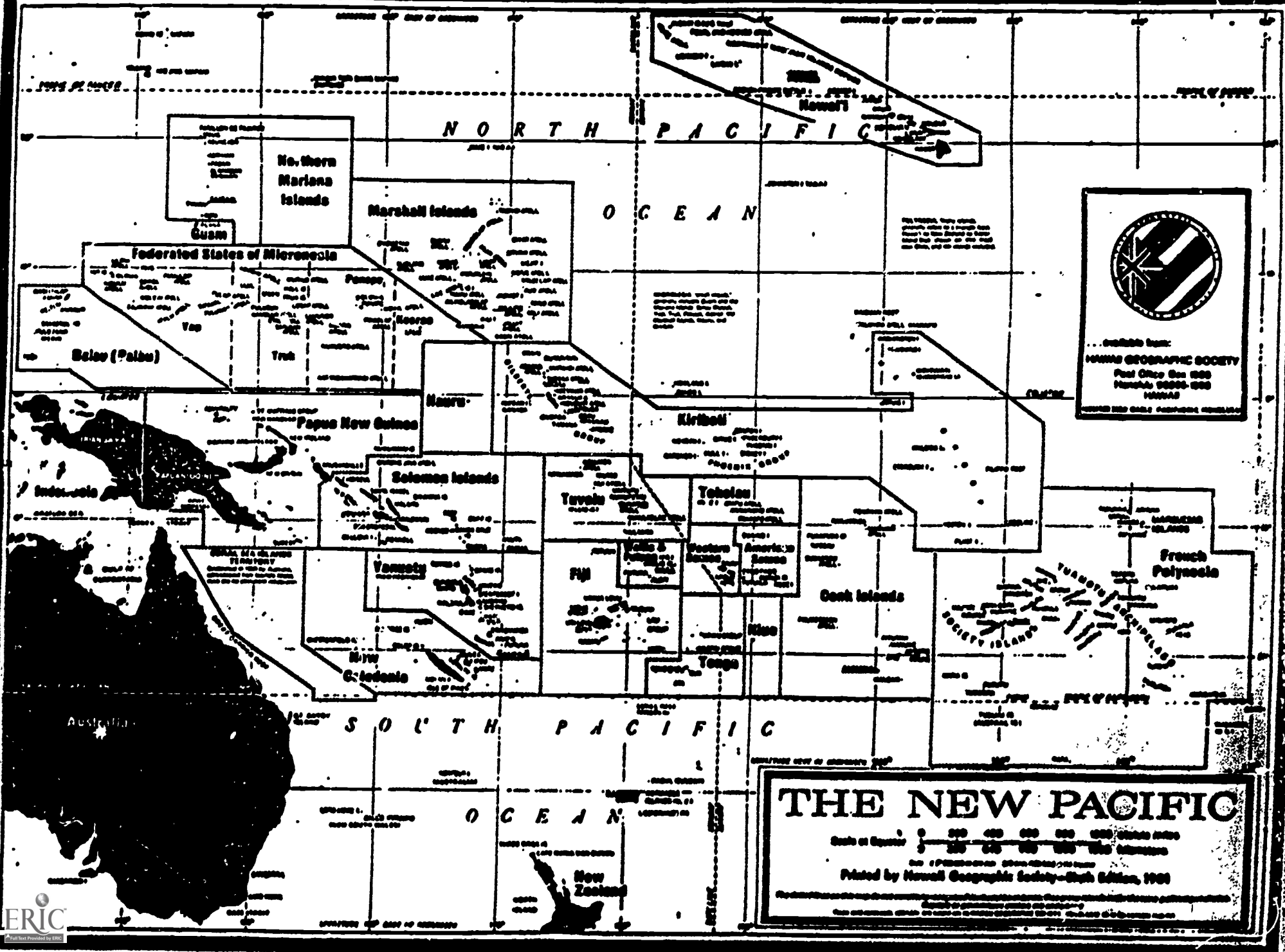
The other four entities were formerly part of the Trust Territory of the Pacific Islands which was granted to the United States by the United Nations to administer in 1946. Prior to World War II, the Japanese administered the Region


COMPARISON OF TOTAL AREA WITH CONTINENTAL UNITED STATES  
AIR ROUTES IN MICRONESIA



AIR FARES (Economy Round Trip)

Guam-Washington, D.C.	-	\$1,353	Guam-Truk	-	\$402
Guam-Honolulu	-	768	Guam-Pohnpei	-	612
Guam-Saipan	-	106	Guam-Kosrae	-	602
Guam-Yap	-	346	Guam-Majuro	-	950
Guam-Belau	-	502			





... GLOBE MAP:  
NATIONAL GEOGRAPHIC SOCIETY  
Post Office Box 1000  
Washington, D.C. 20001-1000  
MADE IN THE U.S.A.

**THE NEW PACIFIC**

Scale of Statute Miles 0 100 200 300 400 500 600 700 800 900 1000

Scale of Nautical Miles 0 100 200 300 400 500 600 700 800 900 1000

Printed by National Geographic Society—Sixth Edition, 1968

Published by the National Geographic Society, Washington, D.C.

(except for Guam). Prior to World War I, the Germans exercised control over the Region. In the 19th century, Spain claimed sovereignty over the entire area, but its influence was felt mostly in Guam and the other Marianas Islands.

Within the past decade, the Trust Territory has defined itself into four entities: CNMI, Republic of Belau, FSM, and Republic of the Marshall Islands. The Northern Marianas Islands became a Commonwealth of the U.S. in 1978. It is governed by a Covenant signed with U.S. officials and its people are treated as U.S. Citizens although they will not be full citizens until the full dissolution of the Trust Territory. The remaining three entities (The F.S.M., The Republic of the Marshalls and the Republic of Belau), have each negotiated a compact of Free Association with the U.S. The compacts now have the approval of the U.S. Government and the local plebiscites and are pending action in the United Nations. Each of these entities has defined relationships with the U.S. Government and the people have many of the rights of U.S. Citizenship. All three have technically retained their sovereignty (hence the titles Republic). The Trust Territory Government, headquartered in Saipan, continues to exist but its role and responsibilities are continually being reduced, pending the official dissolution of the Trust Territory. The CNMI has already separated itself fully from the Trust Territory. The Federated States of Micronesia (FSM) is more politically, linguistically, and culturally complex than the Marshalls or Belau, which are generally homogeneous societies that are geographically isolated from the rest of Micronesia. The FSM has four states (Yap, Truk, Pohnpei, and Kosrae) which function relatively autonomously. The central government of the FSM is in Pohnpei and lines of authority and responsibility are being constantly developed and refined.

The varied nature of government structures and jurisdictions in the Region present many challenges to agencies which attempt to provide services on a region-wide basis. Presently, there are three SEAs in the Region (CNMI, Guam, and TTPI) and eight LEAs (CNMI, Guam, Belau, the Marshalls, Yap, Truk, Pohnpei, and Kosrae). Guam and the CNMI Departments of Education function simultaneously as SEAs/LEAs for their respective areas. Negotiations which take into account each SEA's needs and status can become exceedingly complicated. However, many difficulties are avoided by the general desire to cooperate regionally and the frequent local government efforts at regional cooperation. It should be noted that none of these political changes affect the eligibility of the Region to receive Title VII services.



### C. Cultural/Linguistic Diversity in the Micronesian Region

The Region contains within it a great deal of cultural and linguistic diversity. This diversity was originally developed by the migration patterns into the Region and ecological surroundings (high islands versus atolls). The original pre-contact cultures have been further complicated and influenced by association with various nations, the level of socio-economic development and the nature of contacts with the non-Micronesian world. Culturally, the islands represent many distinct groups which are usually distinguished according to language. Many share commonalities in kinship systems, belief structures, and traditional political structures. The groups which can be easily distinguished from the rest are the Chamorros of the Mariana Islands who have incorporated many cultural elements from the Hispanic world and the Kapingamarangi/Nukuoro people who are culturally and linguistically Polynesian.

The cultural diversity is made more intricate by three conditions. The first is that many of the political entities or subdivisions contain two or more indigenous cultures and languages. Some of the more pronounced multilingual areas are Pohnpei (six indigenous languages) and Yap (four indigenous languages). Secondly, due to widespread accelerated change, the cultural groups are experiencing a "widening cultural generation gap" which has generated broad concern among many Micronesians. This phenomenon of rapid change has seen younger islanders culturally misinterpret older islanders. The third condition is the arrival of non-indigenous cultures and languages. Guam, with its significant population of Asians is the most dramatic example. However, the CNMI is also affected by this trend as are other more accessible areas of the Region. Table 1 provides the 1980 Census data on the population of the political entities by language spoken at home. This documents the complexity of the ethnolinguistic characteristics of the Region.

### D. Education Systems in the Region

The Region currently contains eight relatively independent school systems (one for each administrative entity or subdivision). The systems of Belau, the Marshall Islands, and the four states of the FSM share many similarities because of their common experience in the Trust Territory framework since the conclusion of World War II.



TABLE NO. 1  
ETHNOLINGUISTIC CHARACTERISTICS OF MICRONESEAN REGION:  
FIVE YEARS AND OVER  
Source: 1980 U.S. Census

	FSM								
	GUAM	CNMI	MARSHALLS	BELAU	YAP	POHN.	KORAE	TRUK	Total
Speak Only English	33,182	710	302	104	67	123	9	93	34,680
Carolinian, Ulith., Wol.	45	1,719	1	1	2,190	11	2	3	3,972
Chamorro	32,034	8,516	14	4	2	21	9	2	40,602
Japanese	1,744	192	11	30	7	45	1	22	2,052
Koraeen	56	16	72	17	4	82	4,307	1	4,555
Marshallese	25	101	22,302	20	0	13	9	0	22,470
Palauan	1,018	538	15	9,032	200	32	0	9	10,844
Filipino Languages	15,487	1,405	39	102	53	26	10	23	17,145
Polynesian (except Samoan)	49	1	21	0	3	818	1	0	893
Pohnpeian, Pingalap, Mokil	72	186	38	21	23	14,192	22	0	14,554
Samoan	29	5	3	0	0	0	0	5	42
Trukese	96	161	12	12	25	183	1	24,777	25,268
Yapese	24	34	2	19	3,460	21	4	1	3,565
Other Languages	9,115	732	1,409	1,409	810	1,240	104	2,430	17,249
TOTAL	92,976	14,316	25,331	10,771	6,845	16,807	4,479	27,330	197,891

While this was formerly true of CNMI, the changes taking place in this LEA in the past few years cause it to more nearly resemble the Guam system now. Guam and CNMI systems are fully grade 1-12 systems. The other six LEAs provide education to grades 1-8 to most eligible students, although in many places the shortage of classroom facilities limits schooling to 3-4 hours per day, with double shifts necessary to accommodate the enrollment. High schools were constructed in the centers of these entities only in the late 1960's. Because of the shortage of facilities and teachers, only about 50 percent of the graduating eighth graders are admitted to high school. Because of the lack of student housing at these centrally located high schools, students from the outer islands (particularly females) are at a great disadvantage if they wish to obtain a secondary level education.

Guam's school system is much more cosmopolitan in nature. It features a K-12 structure and parallels service and practices typically found in "stateside" school systems. A longer and closer administrative and political relationship to the U.S., as well as many opportunities for access to the U.S. have contributed to the development of these characteristics. The CNMI's school system is a rapidly changing structure which can be currently seen as being in mid-point between Guam and the rest of Micronesia. All systems in the Region are currently progressing toward U.S. models of education, but the possibility of re-orienting toward different or locally-developed models has been frequently raised as a crucial issue by influential writers and educators in the Region. (Aguon, 1979; Nevin, 1974; Lingenfelter, 1981).

The preparation levels of teachers and certification practices in the Region vary from locale to locale. The facts that many teachers do not have baccalaureate degrees and that most institutions of higher education (IHEs) do not prepare teachers to work in ways tailored specifically for Micronesian school systems, dramatize the need for significant levels of teacher training and Technical Assistance to the LEA (See Table 2). All LEAs are striving to develop staff competencies and to achieve an instructional staff with baccalaureate degrees. However, the needs for improvement in all aspects of the schooling enterprise are so numerous, intense, and diversified (e.g., curriculum, materials, school and classroom environments, teacher qualifications and instructional skill, administration, planning) that effective schooling in the Micronesian Region must be viewed from a long term perspective and as an exceedingly complex challenge.

**TABLE NO. 2**  
**INSTRUCTIONAL PERSONNEL**

<b>LOCATION</b>	<b>TOTAL NO. OF TEACHERS</b>	<b>BACCALAUREATE DEGREE OR ABOVE (%)</b>	<b>NO BACCALAUREATE DEGREE (%)</b>
<b>CNMI</b>	<b>355</b>	<b>38%</b>	<b>62%</b>
<b>FSM</b>			<b>2</b>
<b>Koror</b>	<b>79</b>	<b>12%</b>	<b>88%</b>
<b>Pohnpei</b>	<b>95</b>	<b>12%</b>	<b>88%</b>
<b>Truk</b>	<b>670</b>	<b>21%</b>	<b>79%</b>
<b>Yap</b>	<b>203</b>	<b>10%</b>	<b>90%</b>
<b>MARSHALLS</b>	<b>400</b>	<b>2%</b>	<b>98%</b>
<b>BELAU</b>	<b>317</b>	<b>11%</b>	<b>89%</b>
<b>GUAM</b>	<b>1,544</b>	<b>95%</b>	<b>5%</b>
<b>TOTAL (except Guam)</b>	<b>3,419</b>	<b>12%</b>	<b>88%</b>
<b>TOTAL (including Guam)</b>	<b>4,963</b>	<b>37%</b>	<b>63%</b>

**Sources:** Telephone calls to each LEA in March, 1986; TTPI Report to U.N., 1984;  
Pacific Basin Consortium Proposal, 1982; Guam Department of Education, 1983;  
1980 U.S. Census.

The financial base for these school systems is highly dependent upon direct federal grants to local governments. Only Guam and the CNMI have strong private sector economies, but both of these entities still have the majority of their work forces employed by government agencies (federal and local). The school systems are funded out of the general operations budget of each political entity. For the Marshalls, F.S.M., and Belau, it is estimated that 85% of the operating budget revenues are from federal sources. The figures for Guam and the CNMI are 12% and 35% respectively.

This financial picture is complicated by the expectation that the populations in all entities (except for Guam) will double by the end of this century. Barring wholesale changes in educational models, the need for teachers will double during the same time. This trend dramatizes the continuing need for training, curriculum and material development, technical assistance, and support services.

The expectation of a decreased federal role in all of the entities in the Region in the impending post-Trust Territory years only points up the urgent need for capacity-building at the local level now. It is a goal commonly articulated, generally desired, and featured prominently in all education training and support activities.

#### E. Unique Features and Critical Problems of Micronesian Region Education

In comparison to the U.S. Mainland, Micronesia offers some unique characteristics and challenges. These are identified below because they affect the planning and development of the proposed project. They are of great import in understanding the contours of how specific plans, activities and key events were conceptualized. These features are:

1. The majority of the students in the Region can be easily classified as LEP. In fact, in most areas outside of Guam and to a more limited extent, the CNMI, few models of native-English speakers are available. The total numbers of language "minority" students in the Region total over 90% of the total enrollment (Table 3). This means that virtually all educational activity in the Region is aimed at LEP children. Special distinctions about service to LEP children and programs designed for them are generally unnecessary in areas where there is no English "mainstream".

Table 3  
Estimates of LEP Students in the Micronesian Region  
Public School Enrollment\*

1. <u>Guam</u>		5. <u>Yap, FSM</u>	
Chamorro	- 13,394	Yapese	- 992
Filipino	- 6,546	Ulithian	- 588
CNMI*	- 240	Woleaian	- 440
Micronesian	- 337	Satawalese	- 213
Korean	- 271		
Chinese	- 170	Total	- 2,233
Japanese	- 110	Total Enrollment	- 2,439
Vietnamese	- 57		
Other Pac. Is.	- 69		
Other Asian	- 48		
Total	- 21,252		
Total Enrollment	- 25,168		
* Refers to Chamorros/ Carolinians from CNMI.			
2. <u>CNMI</u>		6. <u>Pohnpei, FSM</u>	
Chamorro	- 2,715	Pohnpeian	- 5,457
Carolinian	- 818	Mokilese	- 150
Micronesian	- 506	Pingalapese	- 323
Filipino	- 111	Sapwuavik	- 238
Korean	- 71	Nukuoran	- 191
Japanese	- 23	Kapingi	- 213
Others	- 390		
		Total	- 6,572
Total	- 4,634	Total Enrollment	- 7,557
Total Enrollment	- 4,774		
3. <u>Belau</u>		7. <u>Kosrae, FSM</u>	
Belauan	- 3,508	Kosraean	- 1,807
Total	- 3,508	Total	- 1,807
Total Enrollment	- 3,512	Total Enrollment	- 1,884
4. <u>Marshall Islands</u>		8. <u>Truk, FSM</u>	
Marshallese	- 11,304	Trukese	- 15,287
Total	- 11,304	Total	- 15,287
Total Enrollment	- 11,399	Total Enrollment	- 15,609

ESTIMATED REGIONAL TOTALS	
LEP	- 66,607
Total Enrollment	- 72,342
Percent LEP	- 92%

Sources: Telephone calls to each LEA; 1980 U.S. Census; TTPI Report to United Nations, 1984; ESEA Title I Proposals from the TTPI, September 1981.

\* Systematic testing for oral English proficiency and English literacy is currently not occurring in most of the Micronesian Region school systems. A study on a sample of Chamorro students in Guam showed 56% were LES or NES. A similar study in CNMI recently showed over 85% tested as LES or NES. Testing is not done elsewhere but we estimate the entire language minority population in the FSM islands, Belau, and the Marshall Islands are also LEP. The dominant languages in all of these jurisdictions are the indigenous Pacific languages. Over 95% of students from these islands who enroll at the University of Guam are placed in remedial oral, reading, or writing courses.

2. The level of University training among teachers in the school systems in the Region is generally below the BA/BS degree except for Guam. As Table 2 shows, the number of degreed-teachers amounts to 12% of the total teaching population in the areas outside of Guam. Teacher training opportunities are limited to three IHE's in the Region: the University of Guam, the College of Northern Marianas (Saipan) and the Community College of Micronesia (Pohnpei). However, only U.D.G. grants baccalaureate degrees. There have been "off-campus" or extension courses offered by the University of Hawaii, and other U.S. universities and colleges, but these frequently do not count towards a degree.
3. The geographic and political features of the Region have tended to keep the Region separated from the full range of services and information available from U.S. Mainland sources. The same features also keep the Region from utilizing each island's experiences in the selection and use of consultants, in training activities, and in arrangements for implementing the material development process. Access to information is problematic and frequently arrives too late to be of any value.
4. Education assistance to the Region in the form of training and technical assistance has frequently been provided by non-Micronesians. The development of Micronesian expertise in the capacity of trainer/consultant/expert has been a very recent phenomenon and the notion of using Micronesians to provide training/technical assistance to each other is still relatively novel. In the realm of materials development, past federal and local investments in the development of indigenous linguistic experts, dictionary development, and the early stages of curriculum development and vernacular material writing has sown the seeds of local capacity. What is needed now is an effort which consolidates these resources, provides the advanced levels of organization, training, and technical assistance required to bring them to maturity and operational facility, which generates long range plans and refinements in the materials development process, and which provides linkages to technical and equipment resources not available in each of the island entities. Unless such an effort is made at this time, many observers believe that the human and material resources developed in the past will be scattered and lost to future efforts, leading to a start-over position in only a year or two.

5. In recent years, there has been tremendous effort on the U.S. Mainland to improve the quality of American education for all students. This is evident in the "school effectiveness" literature. In the Micronesian Region, the results of American educational research on school effectiveness must be applied very cautiously due to the sharp contrasts between U.S. Mainland schooling contexts and those in the Micronesian Region, and because very little baseline educational research has been conducted in Micronesia. One strategy for setting appropriate priorities and for identifying promising approaches is to describe critical problems in Micronesian schools, and to use this listing as a backdrop for training, development, technical assistance, and research efforts. Based on document research, requests and discussions emanating from Micronesian educational leaders to the proposed project director during the preparation of this proposal, the experience of bilingual programs operating in Micronesia such as Project BEAM, program evaluations of Title VII and other programs in the Region, and the extensive on-site school visitations and training and technical assistance experience of the proposed project director and staff, the critical educational problems of the Micronesian Region have been identified, and include:

- a. Basic English and vernacular reading materials either do not exist for some LEA's or do not exist in a sufficient range or quantity;
- b. The qualifications and effectiveness of teachers will continue to be major issues for many years. Most teachers are currently accustomed to a system which discourages them from taking professional responsibility for what occurs in their own classrooms, and which substitutes strict guidance and direction from others on virtually every aspect of classroom routine and instruction;
- c. In many of the LEAs, elementary school children receive only four hours of education per day because of a shortage of school buildings, equipment, materials, and teachers. This means that time on task for instruction and practice of key basic skills (e.g., writing instruction and independent reading) is not available;
- d. Half or more of LEAs in area 15 do not keep adequate or accurate records of project activities. Lists of student's names and records on each child are not maintained, making follow-up of individual students and long-range evaluation and planning very difficult;



- e. Most LEAs in the Region lack testing and evaluation staff who have received professional training and experience in the technical skills they wish to use;
- f. All LEAs lack well-planned structured ESL programs which are coordinated with other courses of instruction. In most LEA's, English language teaching materials and approaches have not been changed for over 20 years and have not been adequately evaluated;
- g. There is an absence of visible examples of effective bilingual and ESL classrooms and programs which could provide models of educational effectiveness;
- h. There is an inadequate level of effective administrative, planning, management, and communication skills, in many of the educational programs within the Region;
- i. In most LEA's, students must learn to speak, understand, read, and write English in non-English environments from limited English proficient teachers. Strong English oral and literacy skills are not available to students, teachers, or within the general community which might help students to use books in English - their only written materials;
- j. Important facility problems exist in every LEA, including school conditions ranging from disrepair to dangerous occupancy, gross inadequacies in numbers of schools and classrooms, lack of electricity and water, absence of libraries in most LEAs at the school, classroom, and community levels.

A number of critical questions emerged from this picture:

- 1. Are the rudimentary elements for establishing literacy in any language available?

For some ethno-linguistic groups in the Micronesian Region the answer to this question is no (e.g. Ulithi, Mortlockese, Nukouoro). For these groups, a combination of circumstances mitigates against literacy. Although English is considered an important part of the curriculum, it is rarely used for any function other than talking to the rare English-speaking visitor, parroting the English drills of the South

Pacific Commission materials in school, or in the event the student leaves the home island for advanced schooling or employment. Orthographies and dictionaries were never completed in these local languages and therefore no native language materials were ever developed. The isolation, low level of educational expenditures, lack of school books and materials and "outer islander" status for many of these groups has mitigated against the written development of their native languages. For these particular languages, the greatest need seems to be for vernacular dictionary work and the development of an abundance of vernacular materials. Project BEAM, the Multifunctional Center for the Region, is not permitted to undertake either of these tasks. Until resources are made available for these and related material development endeavors, it is not realistic to expect universal literacy to develop for these and similar ethno-linguistic groups.

For a majority of the students in the Region, the rudimentary elements in the form of orthographies are there, but are beset with problems stemming from the lack of a literacy tradition in the local languages.

2. Is an understandable education in any or all content areas available to the student, or are steps being taken which will soon render the instruction understandable to the students?

This concern is particularly relevant in Guam, Pohnpei proper, Yap proper, and increasingly, CNMI. Systematic procedures for identifying LEP students, placing them in appropriate programs, and monitoring their progress are not carried out in either of the English dominant school systems (Guam and CNMI). Both of these LEAs have new SEA grants which will presumably work in this direction. The Multifunction Center, Project BEAM, will provide training and technical assistance as these SEAs request it. In Yap and Pohnpei states, where schooling is predominantly in the indigenous non-English language, methods of serving these needs for students who do not speak Yapese or Pohnpeian, respectively, seem more promising when approached through training and technical assistance in ESL techniques. In a few rare instances (e.g. in a school on Pohnpei proper serving primarily Kapingamarangi students), there is some interest in a limited trilingual approach (English-Pohnpeian-Kapinga). In all locations, the availability of either basic or supplementary content area materials in the vernacular languages would help serve this goal.

3. Are students being provided instruction in the quantity and quality necessary to develop their age-specific potential? (Are they being sufficiently challenged? Are expectations of their learning and performance

capabilities sufficiently high?)

Although these considerations apply to all eight LEAs in the Micronesian Region, some LEAs, and therefore, some ethno-linguistic groups, are more severely affected than others. Based on fieldwork at each of these sites, the proposed Project Director finds indications of particularly salient needs: 1) throughout Truk State; 2) in all outer-island schools; 3) in all LEAs where elementary students receive split-day instructional schedules; and 4) in all LEAs where access to secondary education is severely limited. This view is shared by the professional staff of Project BEAM and numerous other observers of the educational system of the Region.

A related consideration is the quality of the English curriculum and the materials which define this curriculum. In six of the eight LEAs, the English materials of the South Pacific Commission (SPC) form the English curriculum. These consist of oral language drills written by Gloria Tate and a series of short readers. These materials are based on the audio lingual approach to ESL. It appears that a seventh LEA (CNMI) is transitioning away from these materials. CNMI has begun piloting several U.S. textbook series. Kosrae is supplementing SPC materials with an assortment of trade books at each school. Pohnpei, Belau, and the Marshall Islands have small pilot projects underway in which basal readers from the U.S. based Laidlaw, HBJ, or Ginn Publishers are being tried. Truk may pilot U.S. textbooks on a small scale during the 1986-87 school year. The SPC materials have been used extensively in this Region for over 20 years and have never been formally evaluated. In an analysis that is underway (Spencer and Lang) preliminary results show the readability levels of SPC readers to be very low. For example, SPC readers 5A (which is used in grades 5-8 in Micronesian schools) has a Dale-Chall (1979) readability level of grade 1.7.

Regardless of which English curriculum or materials are used, educators will have to be trained in how to use them effectively. Most educators (including curriculum writers) in the Region have never seen or used high quality reading and content area book/material series. Most have never had access to teacher guides to assist their daily instruction plans. While Project BEAM will be providing training in methods for reviewing and evaluating English textbooks, it can be expected that structured training and exposure to high quality commercial English education products (e.g. textbook series, trade books, classroom paraphernalia, audio-visual materials, and computer software) could enrich and stimulate the vernacular materials development process. For this reason, the proposed grant will bring curriculum planners and writers into contact with an array of con-

temporary trade book and textbook series, and with experts involved in state of the art development of these materials.

4. Are home/school cultural and learning/teaching style contrasts affecting educational progress?

Culture contrasts appear to negatively affect learning in most of the ethno-linguistic groups of the Region. Concerns appear to be greatest where the culture is quite traditional compared to the American style school format introduced in its midst. Recently, the proposed project director and other Project BEAM staff have been introducing the findings of the Kamehameha Early Education Project on home/school compatability through training on classroom management and comprehension-based reading. These concepts have been addressed in a more formal way in university coursework developed and taught by the proposed project director and attended by bilingual educators from around the Region. These courses include Culture and Education on Guam, Research Methods, and Cross-cultural Child Development in Micronesia. Structures for student and teacher involvement (Phillips, 1972, 1974), cultural conflicts associated with the use of American practices in Micronesian schools such as cafeterias and lending libraries in "high-reciprocity" cultures (Lingenfelter, 1981), the exclusive use of gender-mixed learning contexts (Spencer and Gilbert Lewis, 1986), and sociolinguistic norms which appear to inhibit children from freely vocalizing in the presence of adults (Spencer, Palomo, and Vela, 1986) are among some of the emerging issues of this nature. Some of this growing body of information will be useful to the proposed project in its training and technical assistance activities with curriculum writers as well as with other educators. Some of this information is specific to certain ethno-linguistic groups, and some is relevant to all groups in the Region.

5. Are teachers prepared to meet the challenges of bilingual education on a daily basis with the resources at hand?

Teacher training needs in the Micronesian Region are numerous and can be catalogued in terms of skills and content topics. However, beyond this there is a pervasive reality which is evident in nearly all of the LEA's. Teachers, particularly outside of Guam and the CNMI, frequently lack the confidence as well as skills to manage their classrooms in an independent and autonomous fashion. In large part, this is due to administrative practices and the general low-level of teacher preparation. Directions on instructional methodologies, materials, and schedules are frequently given as orders rather than suggestions. Teachers are not

typically consulted about the materials selected and mandated for use in their classrooms. Additionally, federal bilingual education programs have frequently focused only on materials and curriculum, with teachers expected to implement all activities as directed. While Project BEAM, the Multifunction Center, will strive to train teachers in a way that adds to their professional standing as autonomous individuals, as well as to upgrade their instructional skills, the materials that teachers are given to use in their classrooms must be developed in ways that reinforce their professionalism. For the proposed grant, there is the clear implication that teachers must have opportunities to have input into the materials development process in both initial planning stages as well as during a field testing phase. Currently, such opportunities are not regularly available at either point in the process. An additional implication for the proposed project is that in addition to student materials, a variety of teacher materials should be developed in a coordinated way. These might include lesson plans, suggested activities, classroom organization and management, suggestions, and delineation of skills being developed by each lesson. In the proposed project, training and technical assistance will be given to curriculum writers in the range of such possible teacher materials, exemplar materials, and demonstration/practice/coaching in the development of such materials. In addition, teacher skill and facility in using such materials will need to be developed via both in-service and pre-service training. The proposed grant will provide some of this training, but will also supply training modules on this topic to other federal, local, and extra-regional service providers in the Region as well as to UOG College of Education faculty.

6. Are materials in the students' primary language and English available in sufficient variety and numbers to support education in all grades?

This issue represents the main rationale for the current proposal. None of the indigenous ethno-linguistic groups of Micronesia have a fraction of the L1 materials needed to support an educational program in which skills per grade level are developed in a manner comparable to U.S. standards.

## REFERENCES

- Aguon, K., The Guam dilemma: The need for a Pacific island education perspective. Amer-Asia Journal, 1979, Fall, 77-90.
- Anderson, T. H., and Armbruster, B. B. Content are textbooks. In, R. C. Anderson, T. Osborn, and R. J. Tierney (Eds.), Learning to read in American schools: Basal readers and content texts. (p 193-226). Hillsdale, N. J.: Erlbaum. 1984.
- American Board of Commissioners for Foreign Missions. A firm foundation. Boston: American Board of Commissioners for Foreign Missions, 1948.
- Armbruster, B. B. The problem of "inconsiderate text." In, G. G. Duffy, L. R. Roehler, and J. Mason (Eds.), Comprehension instruction perspectives and suggestions. (p 202-217). New York: Longman. 1984.
- Anttila, E. K. A history of the people of the Trust Territory of the Pacific Islands and their education. (Doctoral dissertation, University of Texas). University Microfilms International, 65-10, 706. 1965.
- Beck, I. L., McKeown, M. G., and McCaslin, E. S. Does reading make sense? Problems of early readers. The Reading Teacher, 1984, 34, 780-785.
- Berman, P. and McLaughlin, M. W. Federal programs supporting educational change, Vol. I: A model of educational change. Santa Monica, CA: Rand Corporation, 1974.
- Calderon, M. Coaching in Teacher Training. Presentation given at Micronesian Trainer of Trainers Workshop, Pohnpei, FSM, November, 1986.
- Calistoga Elementary School. One Day I Lost My Head. Calistoga, CA: Instituto de Lengua y Cultura, 1984.
- Dale, R. and Chall, J. Readability Test. 1979.
- Fensham, F. A. and Tuthill, B. L. The old and new in Micronesia. Chicago: Women's Board of Missions of the Interior, 1907.
- Guam Department of Education. Department of Education comprehensive testing program, 1985 test results. December, 1985.
- Interface Associates, Title VII bilingual education program evaluation of Delau, 1984-85. Washington, D. C. OSEMLA, U.S. Department of Education, 1985.



- Interface Associates, Title VII bilingual education program evaluation of Kosrae, FSM, 1984-85. Washington, D. C.: OBEMLA, U.S. Department of Education, 1985.
- Japanese Government. Annual report of the administration of the South Sea Islands under Japanese mandate for the year 1925. Japanese Government, 1925.
- Joseph, A., and Murray, V. Chamorro and Carolinians of Saipan. Cambridge: Harvard University Press, 1951.
- Langal, I., Yatchdar, J., Yauritik, L., Petalmai, R., and Remiltug, M. Case studies in English oral language proficiency assessment with elementary students from the Outer Islands of Yap State, Federated States of Micronesia. Student research project under the direction of Mary L. Spencer, College of Education, Summer Outreach Program, Ulithi Atoll, Yap State, July, 1985.
- Lingenfelter, J. E. Schooling in Yap: Indigenization vs. cultural diversification. Unpublished Doctoral Dissertation, University of Pittsburgh, 1981.
- Nevin, D. The American touch in Micronesia. New York: W. W. Norton and Co., Inc., 1974.
- Pacific Area Bilingual Education (PALM) Project. Instructional materials catalog, 1982/83. Honolulu, Hawaii: University of Hawaii, 1983.
- Philips, S. Participant structures and communicative competence: Warm Springs children in community and classroom. In C. Cazden, D. Hymes, and V. John, (Eds.) Functions of language in the classroom. New York: Teachers College Press, 1972.
- Philips, S. The invisible culture: communication in classroom and community in the Warm Springs Reservation. (Doctoral dissertation, University of Pennsylvania). Philadelphia: University of Pennsylvania Press, 1975.
- Price, W. Japan's islands of mystery. New York: The John Day Company, 1944.
- Scraggs, E., Oshiro, K., Burke, J., and Deniega, J. An inside look at testing and measurements: University of Guam Counseling Services Center. Student research project under the direction of Mary L. Spencer, Department of Psychology, Division of Social and Behavioral Sciences. University of Guam, Manqilao, Guam, December, 1985.



- Showers, B. The effects of coaching on transfer: An experimental study. Eugene, Oregon: Center for Educational Policy Management, (in press).
- South Pacific Commission. Late Oral Language and SPC Readers. Noumea, New Caledonia: South Pacific Commission.
- Spencer, M. L. Program evaluation and testing in the educational programs of Micronesia - when benchmarks are needed. Paper presented at the annual meeting of the Pacific meeting of the Pacific Island Bilingual Bicultural Association, Truk, February, 1985.
- Spencer, M. L. Entry-exit criteria issues as they pertain to the bilingual education programs of the Micronesian Region. BEBA/ERIC, September, 1985.
- Spencer, M. L., with Gilbert-Lewis, P. Sex equity issues in bilingual education, English as a second language, and foreign language instruction. Theory into practice, Ohio State University, November, 1986.
- Spencer, M. L., Palomo, R., and Vela, N. Studies of Chamorro and English oral language proficiency with Chamorro children in Guam. College of Arts and Sciences Research Conference, University of Guam, Mangilao, Guam, March, 1986.
- Spencer, M. (and Teachers of Kosrae). Studies of English oral proficiency and Kosraean and English reading strategies with Kosraean elementary grade students. Unpublished research paper, University of Guam, Mangilao, Guam, 1986.
- Tawerilmang, T. Inventory of vernacular language materials. In, Report to the Title VII SEA Program, Trust Territory of the Pacific, 1986.
- Thompson, L., Guam and its people. Princeton: Princeton University Press, 1947.
- Trust Territory of the Pacific Islands and Educational Testing Services. Micronesian achievement test series: Tests technical report. Berkeley, California: 1979.
- Underwood, R. A. Language survival, the ideology of English and education in Guam. Education Research Quarterly, Vol. 8, No. 4, 1984.
- Underwood, R. Personal communication, June, 1986.
- Yanaihara, T. Pacific Islands under Japanese Mandate. London: Oxford University Press, 1940.